

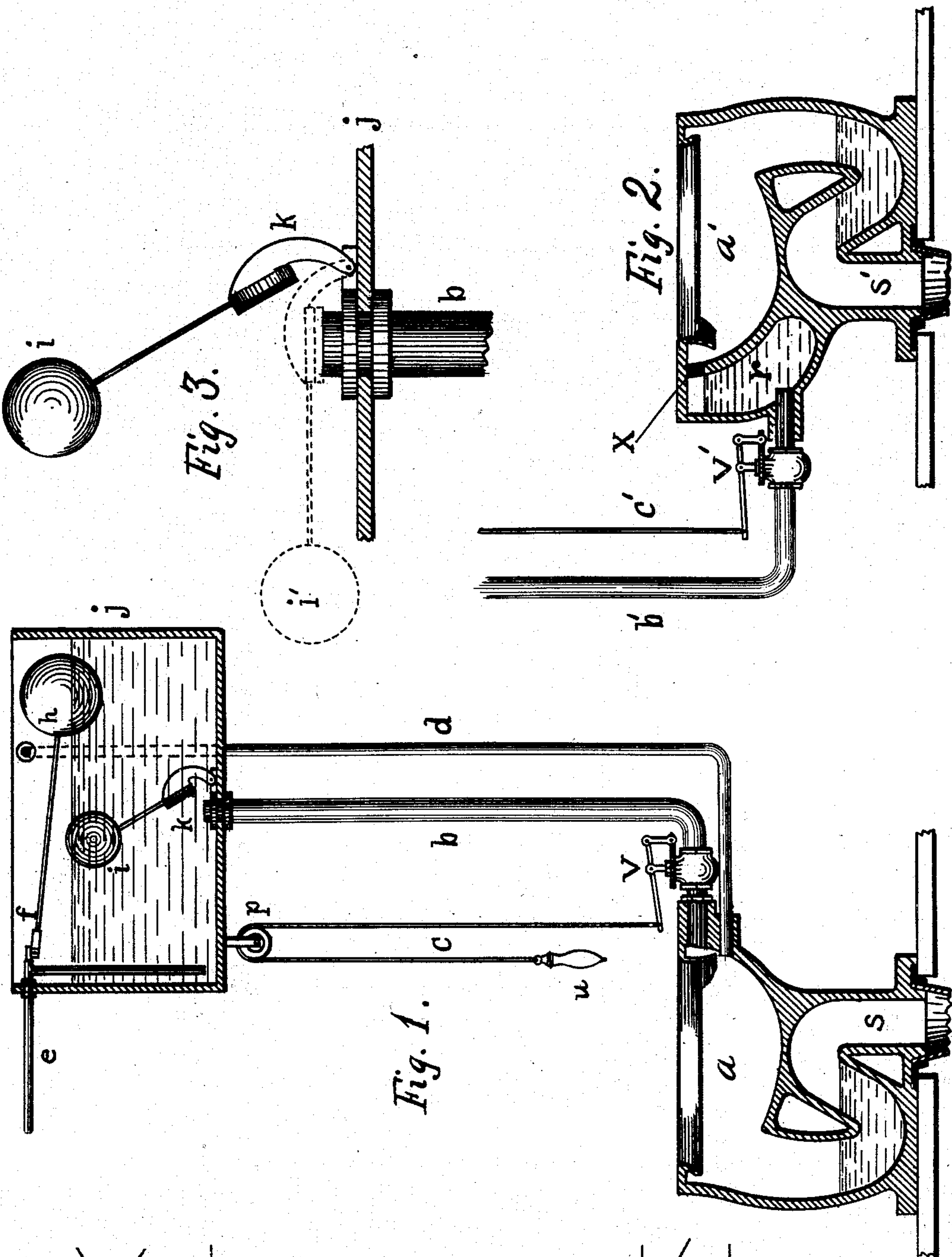
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Patented May 7, 1901.

F. S. PERRIN.
WATER CLOSET.

(Application filed Jan. 5, 1900.)

(No Model.)



WITNESSES
H. D. May
O. F. Jewett

INVENTOR
F. S. Perrin

UNITED STATES PATENT OFFICE.

FREDERIC STANTON PERRIN, OF NEW YORK, N. Y., ASSIGNOR TO THE
SCHMIDT-PERRIN MANUFACTURING COMPANY, OF JERSEY CITY,
NEW JERSEY.

WATER-CLOSET.

SPECIFICATION forming part of Letters Patent No. 673,820, dated May 7, 1901.

Application filed January 5, 1900. Serial No. 477. (No model.)

To all whom it may concern:

Be it known that I, FREDERIC STANTON PERRIN, a citizen of the United States, residing at the city of New York, in the county and State of New York, have invented a new and useful Improvement in Water-Closets, of which the following is a specification.

My invention relates to water-closets in which the bowl is flushed and cleansed by a liberal quantity of water stored in a supply-tank from any suitable source.

The object of my improvement is to provide a water-closet noiseless in operation, one in which the water used for cleansing will pass from the supply-tank to and through the bowl without noise; and to accomplish my object I provide a valve in the service-pipe in close proximity to the bowl and a float-valve at the upper extremity of the service-pipe within the supply-tank to close the service-pipe before the level of the water in the supply-tank reaches the opening in the service-pipe, to maintain at all times a column of water between the supply-tank and the inlet to the bowl, and prevent air from entering the service-pipe.

The water-closets in general use at the present time create a loud and objectionable noise when flushed by water from a supply-tank caused by the entrance of air into the service-pipe and its escape within the bowl. By my invention the service-pipe is always filled with water and air cannot enter therein.

In the drawings which form part of this specification, Figure 1 is a sectional view of a supply-tank and closet-bowl constructed in accordance with my invention. Fig. 2 is a sectional view of a closet-bowl having a reservoir at its rear, into which the service-pipe enters; and Fig. 3 is an enlarged view of the float-valve at the inlet of the service-pipe within the tank.

Similar reference-letters in the several figures indicate similar parts.

In Fig. 1, *a* represents an ordinary properly-trapped bowl with the outlet *S*. *b* is the service-pipe, extending from the supply-tank *j* to the bowl *a*, having at its lowest extremity the flush-controlling spring-valve *V*, which is opened by pulling the handle *u*, attached to the cord *c*, that runs over the pulley *p*, and

having at its upper extremity the valve *k*, to which is attached the float *i*. *e* indicates the pipe for supplying water to the tank *j*. *f* is the supply-valve, operated by the float *h*, and *d* represents an overflow-pipe to prevent the tank *j* from overflowing in case the valve *f* should not operate properly. Normally the supply-tank *j* and the service-pipe *b* are filled with water and the valve *k* is open, as shown in Fig. 1. When it is desired to discharge the bowl *a* of its contents, the operator opens the valve *v* by pulling the cord *c* at the handle *u*, allowing the water in the tank *j* to force the water in the service-pipe *b* through the inlet to the bowl *a*, discharging the contents as usual. As the water in the tank *j* descends through the service-pipe *b* the float *i*, attached to the valve *k*, gradually lowers until the valve *k* rests upon the inlet to the service-pipe *b* and closes the same, preventing the remaining water in the tank *j* from entering the pipe *b*. The float *i* is adjusted to close the inlet to the pipe *b* before the level of the water in the tank *j* descends to the inlet to the pipe *b*, thus preventing the tank *j* from emptying and allowing air to enter the service-pipe *b*. When the valve *k* closes the pipe *b*, the water is virtually shut off from the bowl *a*. Then, as usual in such a case, the handle *u* is released and the valve *v* closes. As the water gradually enters the tank *j* through the pipe *e* on account of the float *h* having descended and opened the valve *f* the float *i* will rise and remove the valve *k* from the opening in the pipe *b*, as shown in Fig. 3, placing the apparatus in its normal condition ready for a similar operation.

In Fig. 2 I have shown a modification of my invention consisting of a closet-bowl containing a small reservoir *r*, into which the service-pipe *b'* enters. This reservoir *r* is always filled with water that extends up to the bowl-inlet *x*. The valve *v'* is located in the service-pipe *b'* below the level of the water within the reservoir *r* to insure a supply of water between the valve *v'* and the inlet *x*. The operation is similar to that of Fig. 1, with the advantage that the valve *v'* may be placed in any position or distance from the bowl *a'*, provided it is below the inlet *x*. When the valve *v'* is opened, the water

in the service-pipe b' forces the water in the reservoir r through the inlet x and cleanses the bowl, and when the valve v' is closed the reservoir r remains filled from the valve v' to the inlet x , thus preventing the entrance of air in the service-pipe between the valve v' and the bowl a' and maintaining a column of water from the inlet x to the supply-tank.

Fig. 3 is an enlarged view of the float-valve for closing the service-pipe before the water in the supply-tank is entirely discharged. The metal body of the valve K is pivoted to an arm attached to the pipe b and carries upon its face a rubber or leather washer that fits over the inlet of the pipe b when the valve is down, as shown in dotted lines. To the body of the valve k is attached a float i in such a manner that the float will rise and fall with the water in the supply-tank, and in doing so will swing the valve k upon its pivot or hinge to close and open the pipe b .

It will readily be seen I may dispense with the float i and operate the valve k by attaching it to the float h , Fig. 1, with any suitable flexible connection; but I prefer to show this valve operated by an independent float.

I am aware that prior to my invention water-closets have been made with supply-tanks in conjunction with service-pipes, and I therefore do not claim such a combination broadly; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. The combination with a water-closet bowl, a water-supply tank and a service-pipe leading therefrom to the bowl, of a flush-con-

trolling valve located at the lower extremity of the service-pipe adjacent to the bowl, and a self-opening and self-closing float-valve at the upper extremity or inlet of the service-pipe, automatically operated by the rising and falling of the water within the water-supply tank, substantially as described.

2. In a water-closet, the combination with a water-supply tank, of a bowl provided with a reservoir communicating with the flushing-inlet of the bowl, a service-pipe extending from the water-supply tank into the reservoir, a flush-controlling valve located in the service-pipe below the level of the water in the reservoir and a self-opening and self-closing float-valve at the inlet of the service-pipe automatically opened and closed by the rising and falling of the water within the water-supply tank, substantially as described.

3. In a water-closet, the combination with the bowl, the elevated water-supply tank and the service-pipe leading therefrom to the bowl, of a flush-controlling valve, located in the service-pipe adjacent to the bowl, to maintain a continuous column of water between the supply-tank and the bowl, and a float-valve located within the water-supply tank, automatically closing the service-pipe inlet before the level of the water in the supply-tank descends to the service-pipe inlet, to exclude air from the service-pipe, substantially as described.

FREDERIC STANTON PERRIN.

Witnesses:

JOHN J. MCCUTCHAN,
ERNEST N. PERRIN.